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Maximum Permissible Exposure Evaluation

FCC ID: 2BCAX-HY300ULTRA

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

EUT Specification

Product Name:	Smart Projector
Trade Mark:	/
Model/Type reference:	HY300Ultra
Listed Model(s):	HY300Pro+, Gimbal 3S, W210, SMOON 300, HY200mini, HY200C, Gimbal 3 Pro, HY300Plus, HY300 Pro+, HY300Pro, HY300PRO, C2, AC1075
Operating Frequency band:	BT: 2402MHz ~ 2480MHz WLAN: 2412MHz ~ 2462MHz RLAN: 5180MHz ~ 5240MHz 5745MHz ~ 5825MHz
Device category:	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Exposure classification:	☐ Occupational/Controlled exposure (S=5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity:	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain:	BT: -3.91dBi Max WLAN: -3.91dBi Max RLAN: 4.45dBi Max
Evaluation applied:	☒ MPE Evaluation ☐ SAR Evaluation

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

F = frequency in MHz



Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

Measurement Result

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
BLE	2402	-3.91	9.30	9 ± 1	10	0.00081	1.000	PASS
GFSK	2402	-3.91	9.27	9 ± 1	10	0.00081	1.000	PASS
802.11ax(HE40)	2437	-3.91	21.18	21 ± 1	22	0.01282	1.000	PASS
802.11a	5240	4.45	15.10	15 ± 1	16	0.02207	1.000	PASS
802.11a	5745	4.45	15.45	15 ± 1	16	0.02207	1.000	PASS

The RLAN and BT can transmit simultaneously

RLAN Power density at 20cm (mW/cm ²)	BT Power density at 20cm (mW/cm ²)	Total Power density at 20cm	Limit (mW/cm ²)	Verdict
0.02207	0.00081	0.02288	1	PASS

Total E-field strength = ((E-field strength)/ (Limit) + (E-field strength)/ (Limit)...) ≤ 1

Note:

For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****